AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

Claims 1-34 (withdrawn)

Claim 35 (currently amended): A method of screening a candidate compound for the ability to reduce the activity or level of a gene product required for cell proliferation, ~~wherein said candidate compound is not previously known to possess the ability to reduce cell proliferation,~~ said method comprising the steps of:

expressing an antisense nucleic acid against a nucleic acid encoding said gene product in a cell to reduce the activity or amount of said gene product in said cell, thereby producing a sensitized cell;

contacting said sensitized cell with a candidate compound, wherein said candidate compound is not previously known to possess the ability to reduce cell proliferation; and

determining whether said candidate compound inhibits the growth of said sensitized cell to a greater extent than said candidate compound inhibits the growth of a nonsensitized cell.

Claim 36 (original): The method of Claim 35, wherein said cell is selected from the group consisting of bacterial cells, fungal cells, plant cells, and animal cells.

Claim 37 (original): The method of Claim 36, wherein said cell is an *E. coli* cell.

Claim 38 (previously amended): The method of Claim 36, wherein said cell is from an organism selected from the group consisting of *Staphylococcus aureus, Pseudomonas aeruginosa, Enterobacter cloacae, Helicobacter pylori, Neisseria gonorrhoeae, Enterococcus faecalis, Streptococcus pneumoniae, Haemophilus influenzae, Salmonella typhimurium, Saccharomyces cerevisiae, Candida albicans, Cryptococcus neoformans, Aspergillus fumigatus, Klebsiella pneumoniae, Salmonella typhi, Salmonella paratyphi, Salmonella cholerasuis, Staphylococcus epidermidis, Mycobacterium tuberculosis, Mycobacterium leprae, Treponema pallidum, Bacillus anthracis, Yersinia pestis, Clostridium botulinum, Campylobacter jejuni, and*

Chlamydia trachomatus, Chlamydia pneumoniae or any species falling within the genera of any of the above species.

Claim 39 (original): The method of Claim 35, wherein said antisense nucleic acid is transcribed from an inducible promoter.

Claim 40 (original): The method of Claim 39, further comprising the step of contacting said cell with a concentration of inducer which induces said antisense nucleic acid to a sublethal level.

Claim 41 (original): The method of Claim 40, wherein said sub-lethal concentration of said inducer is such that growth inhibition is 8% or more.

Claim 42 (original): The method of Claim 40, wherein said inducer is isopropyl-1-thio-β-D-galactoside.

Claim 43 (original): The method of Claim 35, wherein growth inhibition is measured by monitoring optical density of a culture growth solution.

Claim 44 (original): The method of Claim 35, wherein said gene product is a polypeptide.

Claims 45-67 (withdrawn)

Claim 68 (previously amended): A method of screening a candidate compound for the ability to inhibit proliferation of a microorganism said method comprising:

(a) identifying a gene or gene product required for proliferation in a first microorganism;

(b) identifying a homolog of said gene or gene product in a second microorganism;

(c) identifying an inhibitory nucleic acid sequence which inhibits the activity of said homolog in said second microorganism;

(d) contacting said second microorganism with a proliferation-inhibiting amount of said inhibitory nucleic acid, thus sensitizing said second microorganism;

(e) contacting the sensitized microorganism of step (d) with a candidate compound; and

(f) determining whether said candidate compound inhibits proliferation of said sensitized microorganism to a greater extent than said candidate compound inhibits proliferation of a nonsensitized microorganism.

Claim 69 (original): The method of Claim 68, wherein said step of identifying a gene involved in proliferation in a first microorganism comprises:

introducing a nucleic acid comprising a random genomic fragment from said first microorganism operably linked to a promoter wherein said random genomic fragment is in the antisense orientation; and

comparing the proliferation of said first microorganism transcribing a first level of said random genomic fragment to the proliferation of said first microorganism transcribing a lower level of said random genomic fragment, wherein a difference in proliferation indicates that said random genomic fragment comprises a gene involved in proliferation.

Claim 70 (original): The method of Claim 69, wherein said step of identifying a homolog of said gene in a second microorganism comprises identifying a homologous nucleic acid or a nucleic acid encoding a homologous polypeptide in a database using an algorithm selected from the group consisting of BLASTN version 2.0 with the default parameters and FASTA version 3.0t78 algorithm with the default parameters.

Claim 71 (original): The method of Claim 69, wherein said step of identifying a homolog of said gene in a second microorganism comprises identifying a homologous nucleic acid or a nucleic acid encoding a homologous polypeptide by identifying nucleic acids which hybridize to said first gene.

Claim 72 (original): The method of Claim 69, wherein the step of identifying a homolog of said gene in a second microorganism comprises expressing a nucleic acid which inhibits the proliferation of said first microorganism in said second microorganism.

Claim 73 (original): The method of Claim 69, wherein said inhibitory nucleic acid is an antisense nucleic acid.

Claim 74 (original): The method of Claim 69, wherein said inhibitory nucleic acid comprises an antisense nucleic acid to a portion of said homolog.

Claim 75 (original): The method of Claim 69, wherein said inhibitory nucleic acid comprises an antisense nucleic acid to a portion of the operon encoding said homolog.

Claim 76 (original): The method of Claim 69, wherein the step of contacting the second microorganism with a proliferation-inhibiting amount of said nucleic acid sequence comprises directly contacting said second microorganism with said nucleic acid.

Claim 77 (original): The method of Claim 69, wherein the step of contacting the second microorganism with a proliferation-inhibiting amount of said nucleic acid sequence comprises expressing an antisense nucleic acid to said homolog in said second microorganism.

Claim 78 (withdrawn)

Claim 79 (previously amended): A method of screening a candidate compound for the ability to inhibit proliferation said method comprising:

(a) identifying an inhibitory nucleic acid sequence which inhibits the activity of a gene or gene product required for proliferation in a first microorganism;

(b) contacting a second microorganism with a proliferation-inhibiting amount of said inhibitory nucleic acid, thus sensitizing said second microorganism;

(c) contacting the proliferation-inhibited microorganism of step (b) with a candidate compound; and

(d) determining whether said candidate compound inhibits proliferation of said sensitized second microorganism to a greater extent than said candidate compound inhibits proliferation of a nonsensitized second microorganism.

Claims 80-84 (withdrawn)

Claim 85 (currently amended): A method of screening a candidate compound for activity against a biological pathway required for proliferation, ~~wherein said candidate compound is not previously known to possess the ability to reduce proliferation,~~ said method comprising:

sensitizing a cell by expressing an antisense nucleic acid against a nucleic acid encoding a gene product required for proliferation in a cell to reduce the activity or amount of said gene product;

contacting the sensitized cell with a candidate compound, wherein said candidate compound is not previously known to possess the ability to reduce proliferation; and

determining whether said candidate compound inhibits the growth of said sensitized cell to a greater extent than said candidate compound inhibits the growth of an nonsensitized cell.

Claim 86 (original): The method of Claim 85, wherein said cell is selected from the group consisting of bacterial cells, fungal cells, plant cells, and animal cells.

Claim 87 (original): The method of Claim 86, wherein said cell is an *E. coli* cell.

Claim 88 (previously amended): The method of Claim 85, wherein said cell is from an organism selected from the group consisting of Staphylococcus aureus, Pseudomonas aeruginosa, Enterobacter cloacae, Helicobacter pylori, Neisseria gonorrhoeae, Enterococcus faecalis, Streptococcus pneumoniae, Haemophilus influenzae, Salmonella typhimurium, Saccharomyces cerevisiae, Candida albicans, Cryptococcus neoformans, Aspergillus fumigatus, Klebsiella pneumoniae, Salmonella typhi, Salmonella paratyphi, Salmonella cholerasuis, Staphylococcus epidermidis, Mycobacterium tuberculosis, Mycobacterium leprae, Treponema pallidum, Bacillus anthracis, Yersinia pestis, Clostridium botulinum, Campylobacter jejuni, and Chlamydia trachomatus, Chlamydia pneumoniae or any species falling within the genera of any of the above species.

Claim 89 (original): The method of Claim 85, wherein said antisense nucleic acid is transcribed from an inducible promoter.

Claim 90 (original): The method of Claim 89, further comprising contacting the cell with an agent which induces expression of said antisense nucleic acid from said inducible promoter, wherein said antisense nucleic acid is expressed at a sublethal level.

Claim 91 (original): The method of Claim 90, wherein said sublethal level of said antisense nucleic acid inhibits proliferation by 8% or more.

Claim 92 (original): The method of Claim 90, wherein said agent is isopropyl-1-thio-∃-D-galactoside (IPTG).

Claim 93 (original): The method of Claim 91, wherein inhibition of proliferation is measured by monitoring the optical density of a liquid culture.

Claims 94 and 95 (withdrawn)

Claim 96 (currently amended): A method of screening a candidate compound for the ability to inhibit cellular proliferation, ~~wherein said candidate compound is not previously known to possess the ability to inhibit cellular proliferation,~~ said method comprising:

contacting a cell with an agent which reduces the activity or level of a gene product required for proliferation of said cell;

contacting said cell with a candidate compound, wherein said candidate compound is not previously known to possess the ability to reduce cell proliferation; and

determining whether said candidate compound reduces proliferation to a greater extent than said candidate compound reduces proliferation of a cell which has not been contacted with said agent.

Claim 97 (withdrawn)

Claim 98 (original): The method of Claim 96, wherein said agent which reduces the activity or level of a gene product required for proliferation of said cell comprises an antibiotic.

Claim 99 (original): The method of Claim 96, wherein said cell contains a temperature sensitive mutation which reduces the activity or level of said gene product required for proliferation of said cell.

Claims 100 and 101 (cancelled)

Claims 102-111 (withdrawn)

Claim 112 (previously added) The method of Claim 68, wherein said candidate compound is a compound not previously known to possess the ability to inhibit cellular proliferation.

Claim 113 (previously added) The method of Claim 79, wherein said candidate compound is a compound not previously known to possess the ability to inhibit cellular proliferation.

Claim 114 (currently amended) The method of Claim 35, wherein said candidate compound is ~~present in~~ a natural product ~~extract~~.

Claim 115 (currently amended) The method of Claim 68, wherein said candidate compound is ~~present in~~ a natural product ~~extract~~.

Claim 116 (currently amended) The method of Claim 79, wherein said candidate compound is ~~present in~~ a natural product ~~extract~~.

Claim 117 (currently amended) The method of Claim 85, wherein said candidate compound is ~~present in~~ a natural product ~~extract~~.

Claim 118 (currently amended) The method of Claim 96, wherein said candidate compound is ~~present in~~ a natural product ~~extract~~.